



## United States Department of the Interior

GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
P. O. Box 1107  
Harrisburg, Pennsylvania 17108

September 28, 1984

Mr. Edward Shoener  
Superfund/RCRA Compliance Section  
U.S. Environmental Protection Agency  
Region III-6th and Walnut Streets  
Philadelphia, Pennsylvania 19106

Dear Ed:

Enclosed please find a copy of a memorandum to the record, which documents our activities, relative to collecting a Bass Island formation sample, at the East High School well in Erie, PA.

We will put together a summary of all information collected when lab analyses and well logs become available.

Sincerely,

*David E. Click*  
David E. Click  
District Chief

Enclosure

AR300586

UNITED STATES GOVERNMENT

# memorandum

DATE: September 19, 1984

TO: Paul J. Squillace, Hydrologist, WRD, Pittsburgh, PA

SUBJECT: INVESTIGATIONS -- Summary of water sampling of Bass Islands Formation at East High School Gas Well, Erie, PA

TO: THE RECORD

On Sept. 12, 1984, Jack Felbinger and Paul Squillace visited the East High School gas well in Erie, Pa. to meet with the driller of L&K Drilling (Northeast, Pa.) to make arrangements for collecting a ground-water sample from the Bass Islands Formation. Chuck Robie, Project Officer for Erie School District, Harry Mackey, PADER oil and gas Reg., and Mack Porter, B&M Associates were also present on the drill site.

Because of possible  $H_2S$  concentrations in Bass Islands Formation, plans were made to drill through the Oriskany Sandstone and Bass Islands Formation on Friday night and Saturday morning, Sept. 14 and 15 (when school was out). On Wednesday, Sept. 12, those plans were changed and drilling was to continue through the Oriskany Sandstone and Bass Islands Formations on Wednesday night Sept. 12 and Thursday morning, Sept. 13.

Arrangements were made with the L&K drillers to take a water sample at the Oriskany and Bass Islands Formation if water was encountered. Ray Siwicki and Tom Noonan, USGS, Pgh., were to collect the samples for EPA and USGS water labs. Al Brosig (Chemist) - Hammermill, (Erie, Pa.) and Jack Wright, D'Appolonia Engineers (Pgh., Pa.) were also present to take their water samples.

The Oriskany Sandstone was encountered at about 11:45 P.M. Wednesday, Sept. 12. Prior to the Oriskany Sandstone water was being added to the cuttings in the blow pipe to keep dust to a minimum. Approximately when the Oriskany Sandstone was drilled through, (depth 1655') the driller turned off the water being added to the blow pipe. The cuttings from the blow pipe at this time were damp and no water was being blown out of the pipe with the cuttings. When the water samples were taken at 12:15 A.M., Sept. 13 at a depth of 1706' to 1710' a ten inch 1/8 full pipe (approx. 50 gal/min) of water was being discharged with the cuttings. The driller reported that water and soap were not added to the drill hole until after we had collected the water samples. The water samples are believed to have come from the Bass Islands Formation due to: 1) dolomite cuttings collected at the time of water samples, which is indicative of Bass Islands Formation; 2) stratigraphically the drilling had gone through a cherty limestone\* (Onondaga Formation), a thin quartz sandstone\* (Oriskany Sandstone), and was in a dolomite\* (Bass Islands Formation); 3) elevations of lithologic contacts and stratigraphic thicknesses closely match those of nearby 'Wayne School' gas well.

(\* Confirmed by cutting sample inspection with binocular microscope and tested with cold dilute hydrochloric acid.

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No  $H_2S$  gas was noticed during the drilling while USGS Personnel were on site. Harry Macky did not require a mud truck to be on site as he has previously required at the 'Wayne School' gas well, Erie, Pa., Sept. 1984. Ray Siwicki did take 2 air samples from the blow pipe to detect for  $H_2S$  gas on Sept. 12 at 10:30 P.M. and 11:30 P.M. at a depth of approximately 1570' and 1630' respectively. A volumetric samplair pump kit model A was used with detector tubes to test for  $H_2S$  gas. The range tested for was 0 to 30 ppm, and 600 cc of air was taken into the samplair. No  $H_2S$  was detected in these two air samples. Ray Siwicki has been trained in sampling of hazardous materials by EPA.

Well cuttings were collected by Paul Squillace and Keystone Mudlogging (Conneaut Lake, PA) during the drilling of the well. Keystone collected cuttings at 5' and 10' intervals throughout the drill hole. Paul Squillace took well cutting samples of the Opandoga Formation, Oriskany Sandstone, and the Bass Islands Formation.

Three sets of water samples were collected. Field tests revealed a specific conductance of 100,000 micromhos, temperature 25.5°C and pH of 6.2. One set of water sample bottles was sent to EPA, Annapolis, MD, ATTN: Jim Bowen at 12:10 P.M. on 9/13/84, which was later determined unnecessary and the bottles were forwarded to the USGS, National Water Quality Lab in Doraville, Georgia, by means of a phone conversation with Dave Richards, Ed Shoener, and Annapolis Lab. The second set of water sample bottles was sent to EPA, Denver, Colorado, ATTN: Richard Garris, at 12:10 P.M. on 9/13/84. Chain of custody records were used on both of the sets of samples sent to EPA labs. The third set was sent to Atlanta, Georgia for tests using schedules 1924, 1390 and lab codes 0138, 0010, and 0089.

*Paul J. Squillace*

Paul Squillace  
Hydrologist

cc: District Chief, Hbg., PA  
D. B. Richards, Pgh., PA

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